Owner's Manual & Safety Instructions

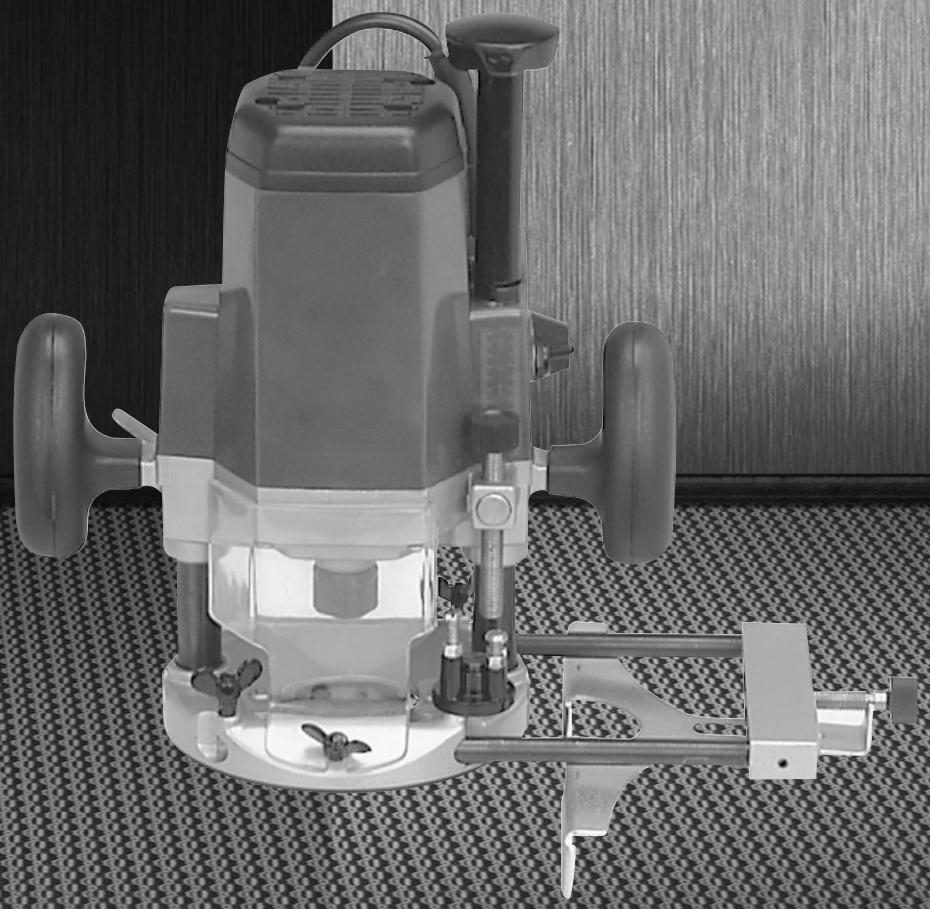
Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

REV 15a

PROFESSIONAL SERIES
CHICAGO ELECTRIC POWER TOOLS

ITEM 37793

PLUNGE ROUTER



Visit our website at: http://www.harborfreight.com
Email our technical support at: productsupport@harborfreight.com

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools. Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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PROFESSIONAL SERIES
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POWER TOOLS

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

⚠ WARNING

Read all safety warnings and all instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.
The term "power tool" in the warnings refers to your mains-operated (corded) power tool.

Work Area Safety

1. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*
3. **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

Electrical Safety

1. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
2. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is grounded.*
3. **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
4. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*
5. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
6. **If operating a power tool in a damp location is unavoidable, use a Ground Fault Circuit Interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

Personal Safety

1. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** *A moment of inattention while operating power tools may result in serious personal injury.*
2. **Use personal protective equipment. Always wear eye protection.** Safety *equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
3. **Prevent unintentional starting. Ensure the Trigger is in the off-position before connecting to power source, picking up or carrying the tool.** *Carrying power tools with your finger on the Trigger or energizing power tools that have the Trigger on invites accidents.*
4. **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
5. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*
6. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
7. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of these devices can reduce dust-related hazards.*
8. **Only use safety equipment that has been approved by an appropriate standards agency.** *Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.*

Power Tool Use and Care

1. **Do not force the power tool. Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
2. **Do not use the power tool if the Trigger does not turn it on and off.** *Any power tool that cannot be controlled with the Trigger is dangerous and must be repaired.*
3. **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools.** *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
4. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*
5. **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*
6. **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
7. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

Service

Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

Router and Trimmer Safety Warnings

1. **Hold power tool by insulated gripping surfaces when performing an operation where cutting tool may contact hidden wiring or its own cord.** *Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator.*
2. **Use clamps or another practical way to secure and support the workpiece to a stable platform.** *Holding the work by hand or against your body leaves it unstable and may lead to loss of control.*
3. **Under no circumstance is the Router base ever to be removed from the Router in order to use bits that are too large to use with the base assembly attached.** Removal of the Router base, and using the Router "free hand" can lead to serious bodily injury.
4. If this Plunge Router is to be mounted on a router table, it must be an approved router table and must have all appropriate holding devices and safety shields. Never use a router table which is not specifically designed for use with this Plunge Router.
5. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
6. Avoid unintentional starting. Prepare to begin work before turning on the tool.
7. Do not lay the tool down until it has come to a complete stop. Moving parts can grab the surface and pull the tool out of your control.
8. When using a handheld power tool, maintain a firm grip on the tool with both hands to resist starting torque.
9. Do not depress the spindle lock when starting or during operation.
10. Do not leave the tool unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.
11. This product is not a toy. Keep it out of reach of children.
12. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
    • Avoid operating alone.
    • Do not use with Trigger locked on.
    • Properly maintain and inspect to avoid electrical shock.
    • Properly ground power cord. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

13. WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:
    - Lead from lead-based paints
    - Crystalline silica from bricks and cement or other masonry products
    - Arsenic and chromium from chemically treated lumber

    Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

14. WARNING: The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

15. WARNING: This product contains di (2-ethylhexyl) phthalate (DEHP), a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

16. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use.
Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders.
To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool.
   If you feel any symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.
4. Use tools with the lowest vibration when there is a choice.
5. Include vibration-free periods each day of work.
6. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
7. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

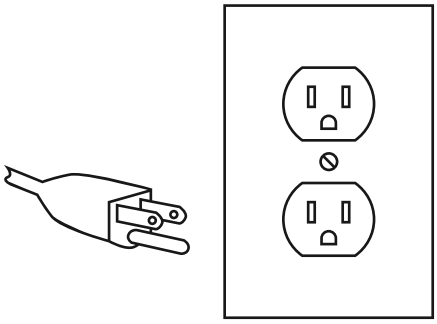
SAVE THESE INSTRUCTIONS.

Grounding

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:
Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool.
Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

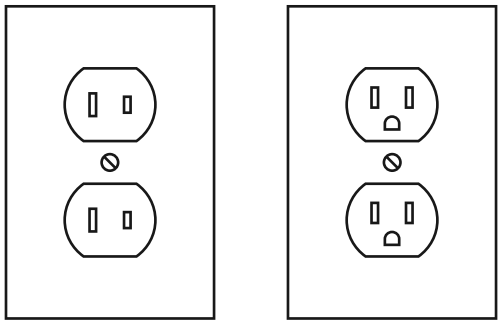
Grounded Tools: Tools with Three Prong Plugs



3-Prong Plug and Outlet

1. Tools marked with "Grounding Required" have a three wire cord and three prong grounding plug. The plug must be connected to a properly grounded outlet. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user, reducing the risk of electric shock. **(See 3-Prong Plug and Outlet.)**
2. The grounding prong in the plug is connected through the green wire inside the cord to the grounding system in the tool. The green wire in the cord must be the only wire connected to the tool's grounding system and must never be attached to an electrically "live" terminal. **(See 3-Prong Plug and Outlet.)**
3. The tool must be plugged into an appropriate outlet, properly installed and grounded in accordance with all codes and ordinances. The plug and outlet should look like those in the preceding illustration. **(See 3-Prong Plug and Outlet.)**

Double Insulated Tools: Tools with Two Prong Plugs



Outlets for 2-Prong Plug

1. Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code.
2. Double insulated tools may be used in either of the 120 volt outlets shown in the preceding illustration. **(See Outlets for 2-Prong Plug.)**

Extension Cords

1. ***Grounded*** tools require a three wire extension cord. ***Double Insulated*** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

TABLE A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25´	50´	75´	100´	150´
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

*** Based on limiting the line voltage drop to five volts at 150% of the rated amperes.**

Symbology

	Double Insulated
	Canadian Standards Association
	Underwriters Laboratories, Inc.
V	Volts
~	Alternating Current
A	Amperes

n_0 xxxx/min.	No Load Revolutions per Minute (RPM)
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.
	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Fire. Do not cover ventilation ducts. Keep flammable objects away.
	WARNING marking concerning Risk of Electric Shock. Properly connect power cord to appropriate outlet.

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Specifications

Motor	23,000 RPM
Electrical Rating	120VAC / 60Hz / 15A
Collet Capacity	1/4", 3/8", 1/2"
Maximum Plunge	2-1/2"; 3 adjustable plunge settings

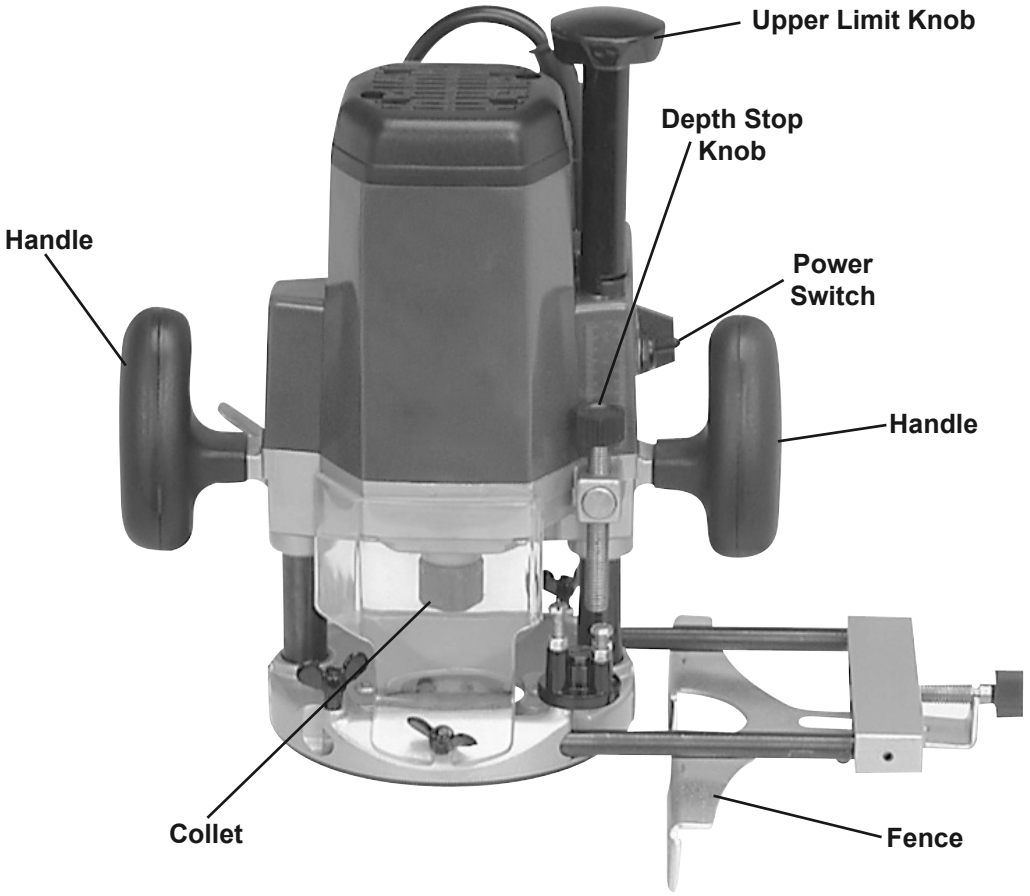
US
224184

Setup - Before Use:

Read the <u>ENTIRE</u> IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

<u>Note:</u> For additional information regarding the parts listed in the following pages, refer to *Parts List and Diagram* on page 13.

Functions



<u>IMPORTANT:</u> The Upper Limit Knob is tightened before shipping and must be loosened to allow plunge functionality.

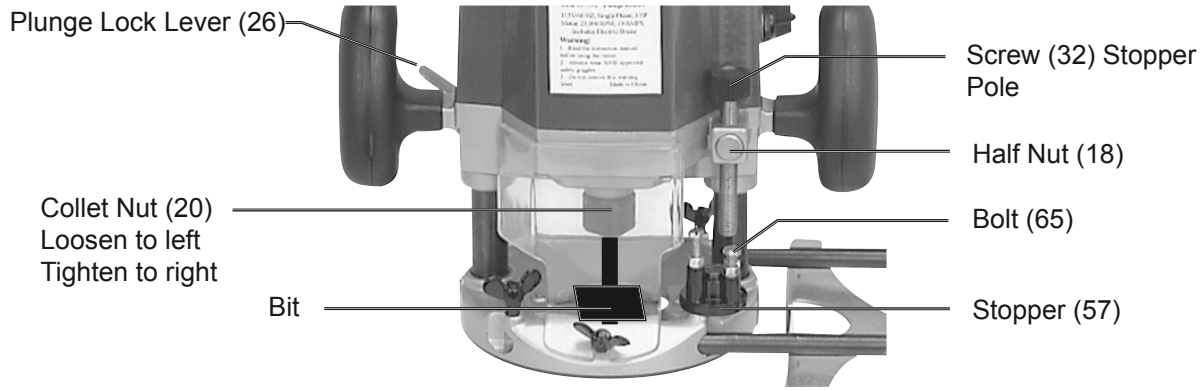
Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Trigger is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

Installing Bits



1. Push down on the Plunge Lock Lever (26) to keep the tool stationary.
2. Press and hold in the Spindle Lock Button (28) on the BACK of the Router, not shown.
3. Using Wrench (5A), loosen the Collet Nut (20).
4. Insert the bit all the way into the Collet Cone (21). When using smaller shank bits, insert the Collet Sleeve (2A) into the Collet Cone, then the bit through the Cone.
5. Securely tighten Collet Nut (20). Do not tighten the Collet Nut without inserting a bit or Collet Cone with bit. Damage can occur.
6. Release the Spindle Lock Button (28).
7. Pull up the Plunge Lock Lever (26).

Cutting Depth Adjustment

1. Place the router on a flat surface.
2. Loosen the Plunge Lock Lever (26).
3. Lower router body until the bit just touches the flat surface.
4. Tighten the Plunge Lock Lever.
5. Turn Stopper (57) turret to select the desired Bolt (65) height.
6. Lower the Screw (32) stopper pole until it touches the adjustable Bolt (65). Press and hold the Half Nut (18) fast feed button to lower stopper pole rapidly.
7. Raise the Screw (32) stopper pole in fine increments to desired depth of cut.

Note: The depth of cut is equal to the distance between the end of the Screw (32) and the top of the Bolt (65).

8. Loosen Plunge Lock Lever (26) and lower router body until Screw (32) stopper pole makes contact with the Bolt (65). The depth of cut can now be seen.

Upper Limit Adjustment

The upper limit adjustment should be set so that the bit clears the stock material by approximately 1/2 inch.

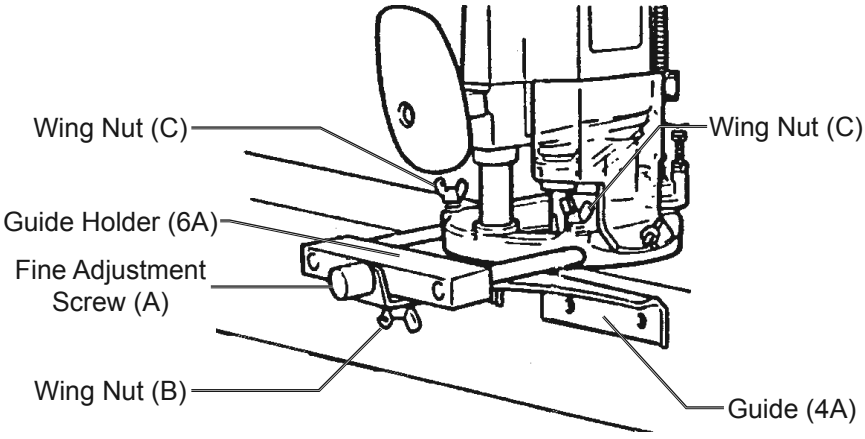
1. Turn the Upper Limit Knob (68) to the correct upper limit and clamp in place using the Plunge Lock Lever (26).
2. Screw the Nut (70) down the screw shaft until it seats firmly against the motor housing (5).
3. Loosen the Plunge Lock Lever.

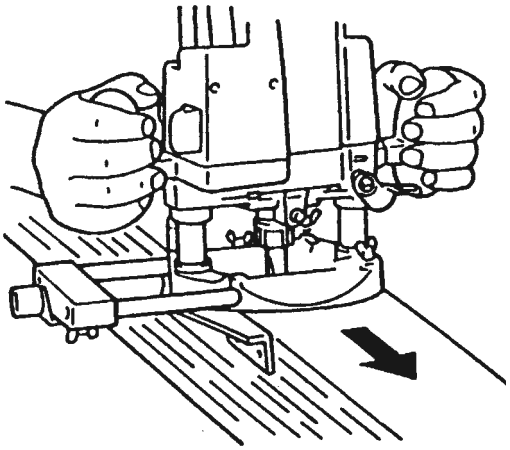
Using the Straight Guide

The Straight Guide (4A) and Guide Holder (6A) are used for chamfering or grooving cuts.

1. Place the Straight Guide on the Guide Holder with the Wing Nut (B).
2. Insert Guide Holder into the holes in the router base.
3. Adjust the Straight Guide by turning the Fine Adjustment Screw (A) to the desired distance from the bit.
4. Tighten wing nuts (C).
5. When cutting, move the router with the Straight Guide flat against the side of the material to be chamfered or grooved. See figure.

Note: Standoffs can be mounted to the Straight Guide to widen its operation. This also prevents larger bits from striking the Straight Guide.

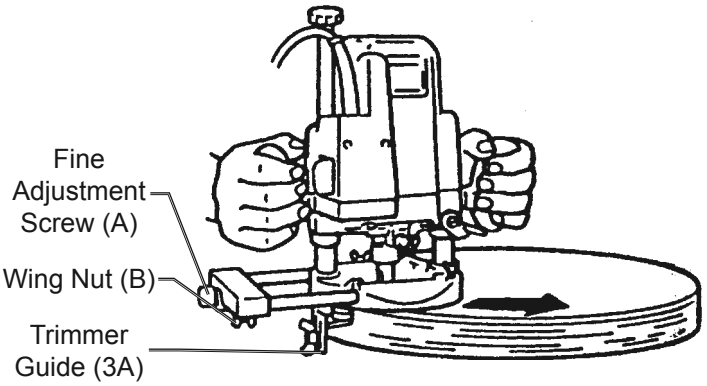




Using the Trimmer Guide

The Trimmer Guide (3A) is used to make cuts on curved material. The guide roller rides the curve of the material.

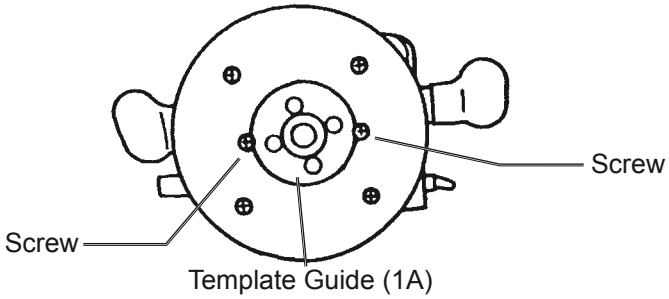
1. Place the Trimmer Guide (3A) on the Guide Holder with the wing nut.
2. Insert Guide Holder into the holes in the router base.
3. Adjust the Trimmer Guide by turning the Fine Adjustment Screw (A) to the desired distance from the bit.
4. Tighten Wing Nut (B).
5. When cutting, move the router with the Trimmer Guide flat against the side of the material to be chamfered or grooved.



Using the Template Guide

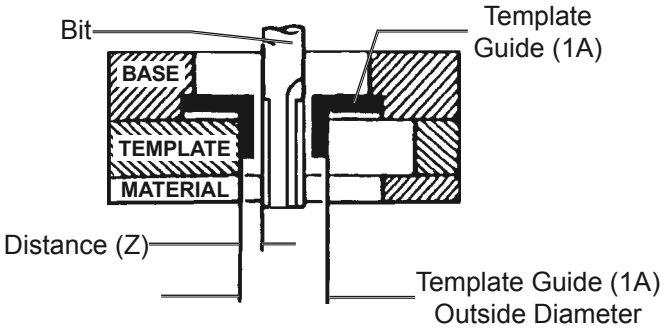
The Template Guide (1A) enables the router to follow Template patterns when making cuts.

1. Lay the router on its side.
2. Loosen the screws on the router base.
3. Insert the Template Guide and retighten screws.



4. Secure the Template to the work surface.
5. Place the router Template Guide inside the Template.
6. Begin cutting, sliding the router along the Template.

Note: The cut size may be slightly different from that of the Template. Allow for the distance (Z) between the router bit and the outside of the Template Guide by subtracting the bit diameter size from the Template Guide (outside diameter), then divide that by 2.



Workpiece and Work Area Set Up

1. Designate a work area that is clean and well lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. Secure loose workpieces using a vise or clamps (not included) to prevent movement while working.
4. There must not be objects, such as utility lines, nearby that will present a hazard while working.
5. Inspect workpiece for nails and screws before working. Do not cut nails or screws.

General Operating Instructions

1. Verify Plunge Lock Lever (26) is loose.
2. Make sure that the Trigger is in the off-position, then plug in the tool.
3. Press the Power Switch (46) to the On position. Hold firmly. Router may try to twist from the torque of turning it on.
4. Before cutting material, watch and feel for vibration that could indicate an improperly installed bit.
5. Hold router with both hands when cutting.
6. Allow bit to come to full speed, slowly engage material. Do not attempt to cut more than 5/8 inch in a single pass. The router bit should always be fed into the stock from left to right so as to match the clockwise rotation of the router.
7. To prevent accidents, turn off the tool and unplug it after use. **Do not set the router down until the bit has stopped turning.** Clean, then store the tool indoors out of children's reach.

Maintenance and Servicing

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Trigger is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - damaged cord/electrical wiring,
   - cracked or broken parts, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. If any cracks appear on the Chip Deflector (53), replace immediately.
4. For bit changing instructions see Tool Set Up on page 9.
5. **⚠WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected. 2. No power at outlet. 3. Tool's thermal reset breaker tripped (if equipped). 4. Internal damage or wear. (Carbon brushes or Trigger, for example.)	1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Turn off tool and allow to cool. Press reset button on tool. 4. Have technician service tool.
Tool operates slowly.	1. Forcing tool to work too fast. 2. Extension cord too long or cord diameter too small.	1. Allow tool to work at its own rate. 2. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See *Extension Cords* in *Grounding* section on page 6.
Performance decreases over time.	1. Carbon brushes worn or damaged. 2. Bit dull or damaged.	1. Have qualified technician replace brushes. 2. Keep bits sharp. Replace as needed.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing tool to work too fast. 2. Bit dull or damaged. 3. Blocked motor housing vents. 4. Motor being strained by long or small diameter extension cord.	1. Allow tool to work at its own rate. 2. Keep bits sharp. Replace as needed. 3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 4. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See *Extension Cords* in *Grounding* section on page 6.

Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.

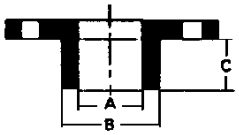
PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

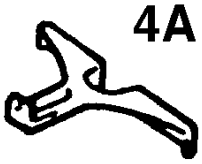
Accessory Parts List and Diagram

Part	Description	Qty
1A	Template Guide; Dimensions: A = 37/64″, B = 5/8″, C = 33/64″	1
2A	Collet Sleeve	1
3A	Trimmer Guide	1
4A	Straight Guide	1
5A	Wrench	1
6A	Guide Holder	1

1A

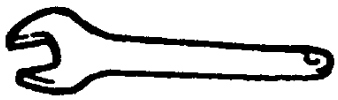


4A



3A

5A



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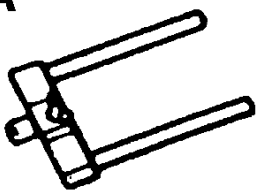

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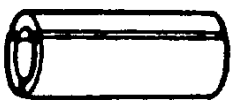


Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

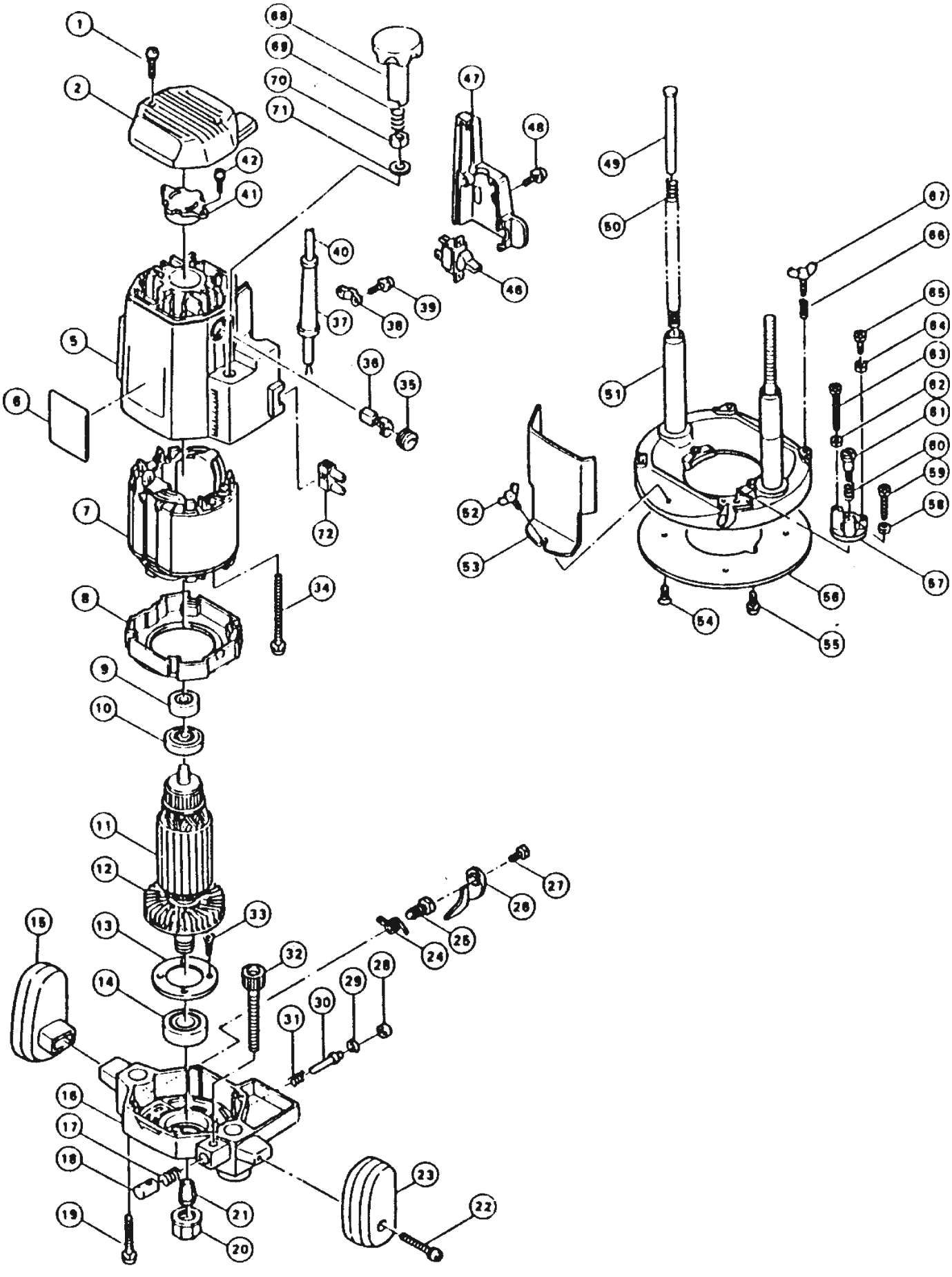
Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

Parts List

Part	Description	Qty
1	Pan Head Screw M5x20 w/washer	2
2	Rear Cover	1
5	Motor Housing	1
6	Name Plate	1
7	Field	1
8	Baffle Plate	1
9	Ball Bearing 629-2RS (GB/1276-94)	1
10	Insulation Washer	1
11	Armature Assembly w/ items 9-12	1
12	Fan 83	1
13	Bearing Retainer 50	1
14	Ball Bearing 6004-2RS (GB/1276-94)	1
15	Knob L	1
16	Motor Bracket	1
17	Compression Spring 10	1
18	Half Nut	1
19	Pan Head Screw M5x40 w/ washer	4
20	Collet Nut	1
21	Collet Cone 12.7	1
22	Pan Head Screw M6x45 w/ washer	2
23	Knob R	1
24	Torsion Spring 15	1
25	Set Bolt M10	1
26	Plunge Lock Lever	1
27	Bolt M5x12	1
28	Spindle Lock Button	1
29	Retaining Ring R-12	1
30	Pin 6	1
31	Compression Spring 7	1
32	Screw M10x77	1
33	Countersunk Head Screw M4x14	4
34	Pan Head Screw M5x80 w/ washer	2
35	Brush Holder Cap	2
36	Carbon Brush 203	2

Part	Description	Qty
37	Cord Guard	1
38	Strain Relief	1
39	Screw 4x18	2
40	Cord	1
41	Bearing Box	1
42	Screw 4x18	2
43	Ball Bearing 629-2RS (GB/1276-94)	1
46	Switch	1
47	Switch Cover	1
48	Screw 4x18	2
49	Pole	1
50	Compression Spring 11	2
51	Base Assembly	1
52	Wing Bolt M5x10	1
53	Chip Deflector	1
54	Countersunk Head Screw M4x10	4
55	Pan Head Screw M5x10 w/ washer	2
56	Base Plate	1
57	Stopper	1
58	Nut M5	1
59	Bolt M5x28	1
60	Compression Spring 12	1
61	Flat Head Screw M6	1
62	Nut M5	1
63	Bolt M5x40	1
64	Nut M5	1
65	Bolt M5x16	1
66	Compression Spring 7	2
67	Wing Bolt M5x15	2
68	Upper Limit Knob	1
69	Compression Spring 12	1
70	Nut M10-15	1
71	Flat Washer 10	1
72	Terminal Block	1

Assembly Diagram



Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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